Amendments to the Claims:

· This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-7 (cancelled).

Claims 8-10 (cancelled).

Claims 11-15 (cancelled).

Claim 16 (previously presented): A method of planning a path through a network, comprising:

receiving a request for a path through a network of structure groups between a source node and a sink node;

determining virtual circuit information for each structure group in said network; and

determining a path through said network using said virtual circuit information, wherein the virtual circuit information includes the number of paths using a common channel through said structure group between any pair of nodes, and wherein a slot-edge matrix is maintained for each data structure, and wherein the availability of a channel is determined based on said slot-edge matrix.

Claim 17 (original): The method of claim 16, wherein said request also includes a time period requested, wherein a slot-edge matrix is maintained for various requestable time periods and wherein the availability of a channel is determined based on the slot-edge matrix for the time frame requested.

Claim 18 (previously presented): The method of claim 16, wherein said virtual circuit information for each path through a structure group includes the number of nodes visited on said path.

Claim 19 (previously presented): The method of claim 16, wherein said request includes the type of service desired, and wherein said step of determining a path through said network selects a path using the desired service type.

Claim 20 (original): The method of claim 19, wherein said type of service may be SONET service.

Claim 21 (previously presented): The method of claim 16, wherein said network is a fiber-optic network.

Claim 22 (previously presented): The method of claim 16, wherein said virtual circuit information includes two pseudo nodes for each group node.

Claim 23 (previously presented): The method of claim 16, wherein nodes in said network may be connected by links, and wherein said virtual circuit information is determined using a data set containing information on the availability of channels in said links.

Claim 24 (previously presented): The method of claim 23, further comprising the step of updating said data set to reflect that said path is no longer available.

Claim 25 (previously presented): The method of claim 16, wherein said request includes the bandwidth desired, and wherein a path through a structure group is available only if a path having the desired bandwidth is available.

Claims 26-29 (cancelled).